Alexander Sergeev

List of Publications by Citations

132 papers	959 citations	17 h-index	25 g-index
139 ext. papers	1,184 ext. citations	1.4 avg, IF	3.9 L-index

#	Paper	IF	Citations
132	Generation of powerful subnanosecond microwave pulses by intense electron bunches moving in a periodic backward wave structure in the superradiative regime. *Physical Review E*, **1999**, 60, 3297-304	2.4	79
131	Generation of Cherenkov superradiance pulses with a peak power exceeding the power of the driving short electron beam. *Physical Review E*, **2006**, 74, 016501	2.4	74
130	Quasi-optical theory of relativistic submillimeter surface-wave oscillators. *Applied Physics Letters*, **2011**, 99, 121505	3.4	46
129	Time-domain self-consistent theory of frequency-locking regimes in gyrotrons with low-Q resonators. *Physics of Plasmas*, **2015**, 22, 033101	2.1	36
128	Experimental studies of two-dimensional coaxial Bragg structures for a high-power free-electron maser. *Applied Physics Letters*, **2002**, 80, 1517-1519	3.4	33
127	Using Two-Dimensional Distributed Feedback for Synchronization of Radiation from Two Parallel-Sheet Electron Beams in a Free-Electron Maser. *Physical Review Letters*, **2016**, 117, 114801	7.4	32
126	Generation of Rogue Waves in Gyrotrons Operating in the Regime of Developed Turbulence. *Physical Review Letters*, **2017**, 119, 034801	7.4	30
125	Powerful surface-wave oscillators with two-dimensional periodic structures. *Applied Physics Letters*, **2012**, 100, 143510	3.4	28
124	Generation of spatially coherent radiation in free-electron masers with two-dimensional distributed feedback. *JETP Letters*, **2008**, 87, 618-622	1.2	27
123	Generation of Subterahertz Superradiance Pulses Based on Excitation of a Surface Wave by Relativistic Electron Bunches Moving in Oversized Corrugated Waveguides. *Physical Review Letters*, **2016**, 117, 204801	7.4	26
122	Oversized co-axial and cylindrical surface-wave oscillators with two-dimensional periodical grating (quasi-optical model). *Journal of Applied Physics*, **2013**, 113, 104504	2.5	24
121	Experiment on pulse heating and surface degradation of a copper cavity powered by powerful 30 GHz free electron maser. *Physical Review Special Topics: Accelerators and Beams*, **2011**, 14,		24
120	Self-oscillation in uhf generators with diffraction radiation output. *Radiophysics and Quantum Electronics*, **1986**, 29, 89-97	0.7	24
119	Frequency Tunable sub-THz Gyrotron for Direct Measurements of Positronium Hyperfine Structure. *Journal of Infrared, Millimeter, and Terahertz Waves*, **2018**, 39, 975-983	2.2	21
118	Effect of the nonlinear compression of ultrashort microwave pulses in the process of the amplification by quasistationary electron beams. *JETP Letters*, **2010**, 91, 553-557	1.2	17
117	On the synthesis of radiation spectrum in a sectioned relativistic backward wave tube. *Technical Physics Letters*, **2003**, 29, 164-167	0.7	17
116	Stimulated Coherent Emission from Short Electron Bunches in Free Space. *Physical Review Letters*, **1996**, 77, 1492-1495	7.4	17

115	Frequency Locking and Stabilization Regimes in High-Power Gyrotrons with Low-Q Resonators. *Radiophysics and Quantum Electronics*, **2016**, 58, 684-693	0.7	17
114	Generation of a periodic sequence of powerful ultrashort pulses in a traveling wave tube with bleachable absorber in the feedback loop. *Technical Physics Letters*, **2015**, 41, 836-839	0.7	16
113	Terahertz free-electron lasers with bragg structures based on the coupling between traveling and quasicritical waves. *JETP Letters*, **2010**, 91, 266-270	1.2	14
112	Self-induced transparency and electromagnetic pulse compression in a plasma or an electron beam under cyclotron resonance conditions. *Physical Review Letters*, **2010**, 105, 265001	7.4	14
111	Self-induced transparency, compression, and stopping of electromagnetic pulses interacting with beams of unexcited classical oscillators. *Journal of Experimental and Theoretical Physics*, **2011**, 113, 772-780	1	12
110	3D quasioptical theory of terahertz superradiance of an extended electron bunch moving over a corrugated surface. *Physical Review Letters*, **2013**, 110, 184801	7.4	11
109	Two Ways for High-Power Generation of Subterahertz Radiation by Usage of Strong Relativistic Electron Beams. *IEEE Transactions on Terahertz Science and Technology*, **2015**, 5, 478-485	3.4	11
108	Observation of the high-Q modes inside the resonance zone of two-dimensional Bragg structures. *Applied Physics Letters*, **2008**, 92, 103512	3.4	11
107	Experimental observation of cyclotron superradiance. *JETP Letters*, **1996**, 63, 331-335	1.2	11
106	Dynamics of semiconductor lasers with two-dimensional distributed feedback. *Physical Review A*, **2015**, 91,	2.6	10
105	Quasi-optical theory of relativistic surface-wave oscillators with one-dimensional and two-dimensional periodic planar structures. *Physics of Plasmas*, **2013**, 20, 113104	2.1	10
104	Quasi-optical model of relativistic surface-wave generators for millimeter and submillimeter range. *Technical Physics Letters*, **2011**, 37, 605-609	0.7	10
103	Generation of intense spatially coherent superradiant pulses in strongly oversized 2D periodical surface-wave structure. *Applied Physics Letters*, **2020**, 117, 183505	3.4	9
102	Powerful terahertz free electron lasers with hybrid Bragg reflectors. *Physical Review Special Topics: Accelerators and Beams*, **2011**, 14,		9
101	Experimental observation of superradiance in the stimulated scattering of an intense microwave pump wave by a counterpropagating subnanosecond high-current relativistic electron bunch. *JETP Letters*, **2005**, 82, 263-266	1.2	9
100	Generation of powerful narrow-band 75-GHz radiation in a free-electron maser with two-dimensional distributed feedback. *Technical Physics Letters*, **2013**, 39, 801-804	0.7	8
99	Cherenkov masers with two-dimensional distributed feedback. *Technical Physics Letters*, **2010**, 36, 83-87	0.7	8
98	Quasi-optical theory of coaxial and cylindrical relativistic surface-wave oscillators. *Technical Physics*, **2013**, 58, 267-276	0.5	7

97	Generation of ultrashort microwave pulses in the sub-THz and THz range based on the cyclotron superradiance effect. *Technical Physics Letters*, **2017**, 43, 831-834	0.7	7
96	A traveling-wave ring resonator with Bragg deflectors in a two-stage terahertz free-electron laser. *Technical Physics Letters*, **2014**, 40, 730-734	0.7	7
95	Amplification of ultrashort electromagnetic pulses propagating along quasi-continuous electron beams. *Technical Physics*, **2009**, 54, 103-109	0.5	7
94	Free-electron maser with high-selectivity Bragg resonator using coupled propagating and trapped modes. *Technical Physics Letters*, **2010**, 36, 952-956	0.7	7
93	High-efficiency narrow-band free-electron maser using a Bragg cavity with a phase discontinuity in the ripples. *Technical Physics Letters*, **1999**, 25, 429-432	0.7	7
92	Evanescent waves propagation along a periodically corrugated surface and their amplification by relativistic electron beam (quasi-optical theory). *Physics of Plasmas*, **2013**, 20, 063105	2.1	6
91	Gyrotron generation of broadband chaotic radiation under overlapping of high- and low-frequency resonances. *Technical Physics*, **2017**, 62, 1562-1568	0.5	6
90	Short-wavelength tunable Bragg reflectors based on coupling of propagating and cutoff waves: Modeling and experimental studies. *Applied Physics Letters*, **2012**, 101, 083507	3.4	6
89	Mechanism of free electron maser self-excitation using coupled propagating and trapped modes. *Technical Physics Letters*, **2006**, 32, 896-900	0.7	6
88	The generation of superradiance pulses by high-current subnanosecond electron bunches moving in a periodic slow-wave system: Theory and experiment. *Technical Physics*, **2002**, 47, 80-87	0.5	6
87	Characteristic features of the amplification of short electromagnetic pulses during propagation along steady-state electron beams. *Technical Physics Letters*, **1999**, 25, 930-932	0.7	6
86	Time-domain theory of low-Q gyrotrons with frequency-dependent reflections of output radiation. *Physics of Plasmas*, **2018**, 25, 013104	2.1	5
85	Quasi-optical theory of radiation amplification by electron flow above resistive metal surface. *Technical Physics Letters*, **2013**, 39, 123-126	0.7	5
84	Generation of periodic high-power ultrashort pulse sequences in a chain of coupled traveling-wave tubes operating in the regimes of amplification and nonlinear Kompfner suppression. *Technical Physics Letters*, **2017**, 43, 842-845	0.7	5
83	Ponderomotive effects in intense pumping wave action on electron and plasma bunches. *Journal of Experimental and Theoretical Physics*, **2003**, 96, 904-914	1	5
82	Experimental Observation of Chaotic Generation at 1.5% Spectral Width in a Gyrotron under Large Supercriticality Conditions. *Technical Physics Letters*, **2019**, 45, 511-514	0.7	4
81	Relativistic surface-wave generators based on two-dimensional periodic structures. *Technical Physics Letters*, **2012**, 38, 188-192	0.7	4
80	Stimulated Cherenkov radiation of a relativistic electron beam moving over a periodically corrugated surface (quasi-optical theory). *Journal of Experimental and Theoretical Physics*, **2013**, 117, 975-987	1	4

79	Submillimeter planar gyrotrons with transverse diffraction output of radiation. *Technical Physics Letters*, **2011**, 37, 79-82	0.7	4
78	Planar free-electron lasers with combined 1D/2D Bragg mirror resonators: A theoretical study. *Technical Physics Letters*, **2000**, 26, 701-704	0.7	4
77	Passive mode locking and formation of dissipative solitons in electron oscillators with a bleaching absorber in the feedback loop. *Journal of Experimental and Theoretical Physics*, **2017**, 124, 41-48	1	3
76	Terahertz superradiance of an extended electron bunch propagating over a corrugated surface. *Technical Physics Letters*, **2012**, 38, 951-954	0.7	3
75	Relativistic surface-wave oscillators with 1D and 2D periodic structures. *Technical Physics*, **2012**, 57, 1692-1705	0.7	3
74	Powerful Cherenkov oscillators with 2D distributed feedback. *Technical Physics*, **2011**, 56, 1791-1801	0.5	3
73	Using two-dimensional Bragg structures for the synchronization of radiation in planar backward wave oscillators. *Technical Physics Letters*, **2009**, 35, 190-192	0.7	3
72	Using two-dimensional distributed feedback for the synchronization of emission from laser active media. *Technical Physics Letters*, **2008**, 34, 113-117	0.7	3
71	Theory of a planar free-electron maser with transverse electromagnetic flux circulation in a 2D Bragg mirror. *Technical Physics*, **2006**, 51, 1618-1623	0.5	3
70	Effect of diffraction on the electrodynamic characteristics of two-dimensional coaxial Bragg resonators. *Technical Physics*, **2003**, 48, 1554-1564	0.5	3
69	A two-dimensional distributed feedback used for synchronization of a multibeam planar free-electron maser system. *Technical Physics Letters*, **2001**, 27, 240-244	0.7	3
68	Planar two-dimensional Bragg resonators with corrugated surfaces: Theory and experiment. *Technical Physics Letters*, **2000**, 26, 348-351	0.7	3
67	. *IEEE Electron Device Letters*, **2021**, 42, 751-754	4.4	3
66	Quasi-optical theory of relativistic Cherenkov surface-wave oscillators with oversized cylindrical waveguides. *Physics of Plasmas*, **2021**, 28, 063102	2.1	3
65	Quasi-optical theory of amplification of surface waves propagating above corrugated structures by a relativistic electron beam (impedance approximation). *Technical Physics*, **2016**, 61, 1609-1618	0.5	3
64	Generation of Electromagnetic Rogue-Waves in Submillimeter-Band Gyrotrons. *Journal of Infrared, Millimeter, and Terahertz Waves*, **2019**, 40, 150-157	2.2	3
63	Dissipative solitons in electron oscillators with a saturable absorber. *Physics of Plasmas*, **2018**, 25, 093111	2.1	3
62	Generation of a Periodic Sequence of High-Power Ultrashort Pulses in a Chain of Coupled Backward-Wave and Traveling-Wave Tubes Operating in the Regimes of Amplification and Nonlinear Kompfner Suppression. *Technical Physics*, **2018**, 63, 1205-1211	0.5	2

61	Quasioptical Theory of Relativistic Cherenkov Generators and Amplifiers. *Radiophysics and Quantum Electronics*, **2014**, 56, 508-531	0.7	2
60	The quasi-optical theory of surface wave formation over structures with one- and two-dimensional periodic corrugations of a small depth. *Journal of Communications Technology and Electronics*, **2013**, 58, 487-497	0.5	2
59	Nonlinear theory of coaxial free-electron masers with 2D distributed feedback (quasi-optical approximation). *Technical Physics*, **2010**, 55, 326-336	0.5	2
58	Collective spontaneous emission in a distributed feedback laser with an inhomogeneously broadened active medium. *Bulletin of the Russian Academy of Sciences: Physics*, **2010**, 74, 904-907	0.4	2
57	Observation of self-modulation regimes of generation in high-power backward-wave tubes. *Technical Physics Letters*, **1998**, 24, 816-818	0.7	2
56	Generation of giant pulses of scattered radiation on the moving front of a pump wave. *JETP Letters* , **2008**, 87, 124-127	1.2	2
55	Feasibility of using a free-electron maser with a Bragg resonator for testing high-Q resonant structures. *Technical Physics*, **2006**, 51, 887-893	0.5	2
54	Spatially coherent radiation from a coaxial free-electron laser with a resonator composed of one-dimensional and two-dimensional Bragg mirrors. *Technical Physics*, **2001**, 46, 1009-1013	0.5	2
53	Theory of cyclotron superradiance from a moving electron bunch under group synchronism conditions. *Technical Physics*, **2000**, 45, 813-820	0.5	2
52	Pulsed EHF superradiance due to the stimulated scattering of a high-power pump wave by a counterpropagating electron bunch. *Technical Physics Letters*, **2000**, 26, 694-697	0.7	2
51	Possible use of two-dimensional Bragg structures in an FEL amplifier powered by a sheet electron beam. *Technical Physics Letters*, **1999**, 25, 796-799	0.7	2
50	Diffraction-Mode Selection in Heterolasers with Planar Bragg Structures. *Semiconductors*, **2020**, 54, 1161-1165	0.7	2
49	Planar THz FELs Based on Intense Parallel Sheet Electron Beams and Intracavity Wave Scattering. *Bulletin of the Russian Academy of Sciences: Physics*, **2019**, 83, 140-145	0.4	1
48	Frequency Conversion of High-Power Gyrotron Radiation under Conditions of Raman Backscattering on an Auxiliary Electron Beam. *Technical Physics Letters*, **2019**, 45, 134-137	0.7	1
47	Generation of Rogue Waves in Gyrotrons with High-Current Relativistic Beams. *Bulletin of the Russian Academy of Sciences: Physics*, **2020**, 84, 189-192	0.4	1
46	Startup scenarios for an ultrashort pulse generator based on two coupled helical gyro-TWTS operating in the amplification and nonlinear absorption modes. *Bulletin of the Russian Academy of Sciences: Physics*, **2018**, 82, 53-58	0.4	1
45	2D Bragg Resonators Based on Planar Dielectric Waveguides (from Theory to Model-Based Testing). *Semiconductors*, **2019**, 53, 1282-1286	0.7	1
44	Generation of a spatially coherent field structure in free-electron masers with 2D distributed feedback. *Technical Physics*, **2014**, 59, 250-257	0.5	1

43	Modulation of high-intensity microwave radiation during its resonant interaction with counterflow of nonexcited cyclotron oscillators. *Technical Physics Letters*, **2014**, 40, 495-498	0.7	1
42	Narrow-band terahertz Bragg reflectors based on coupling of propagating and quasi-critical waves. *Technical Physics*, **2012**, 57, 415-421	0.5	1
41	Relativistic electron beam induced amplification of surface wave propagating over a corrugated metal surface. *Technical Physics Letters*, **2013**, 39, 294-298	0.7	1
40	Chaotic millimeter-wave generation on the basis of wideband gyro-amplifiers with a helical corrugated waveguide. *Technical Physics Letters*, **2017**, 43, 162-165	0.7	1
39	Powerful multichannel planar FEMs based on intense parallel sheet beams **2017**,		1
38	Generation of high-power Cherenkov superradiance pulses using 2D periodic slow-wave structures based on oversized cylindrical waveguides. *Technical Physics Letters*, **2017**, 43, 756-759	0.7	1
37	Formation of the transverse field structure in terahertz planar free-electron lasers. *Technical Physics*, **2011**, 56, 400-405	0.5	1
36	Frequency stabilization in free-electron masers with 2D and 1D distributed feedback. *Technical Physics*, **2009**, 54, 1384-1388	0.5	1
35	Generation of superradiance pulses by high-current subnanosecond electron bunches moving in a periodic slow-wave structure. *Technical Physics Letters*, **1998**, 24, 709-711	0.7	1
34	Open planar Bragg waveguides for mode selection in quantum and classical amplifiers. *Laser Physics*, **2007**, 17, 665-671	1.2	1
33	Experimental observation of high-Q modes at the center of a resonance band of two-dimensional Bragg structures. *Technical Physics Letters*, **2007**, 33, 117-121	0.7	1
32	Generation of subnanosecond microwave pulses based on the Cherenkov superradiance effect. *Technical Physics*, **2002**, 47, 335-342	0.5	1
31	Chaotic generation in a megawatt backward-wave tube. *Technical Physics*, **2001**, 46, 1420-1427	0.5	1
30	Theory of group synchronism in free-electron waveguide lasers fed a sequence of short electron pulses. *Technical Physics*, **1999**, 44, 203-208	0.5	1
29	Cyclotron superradiance of a high-current electron bunch under group synchronism conditions. *Russian Physics Journal*, **1996**, 39, 1233-1240	0.7	1
28	Unified quasi-optical theory of short-wavelength radiation amplification by relativistic electron beams moving near the impedance surfaces. *Physics of Plasmas*, **2020**, 27, 113106	2.1	1
27	Generation Spectrum of Long-Pulse Free-Electron Terahertz Lasers: Quasilinear Theory. *JETP Letters*, **2021**, 113, 626-630	1.2	1
26	Using Multichannel Laser Complexes for Incoherent Pumping of X-ray Compton Free-Electron Lasers. *Technical Physics Letters*, **2018**, 44, 605-608	0.7	1

25	Increasing the Power and Radiation Coherence of Wide-Aperture Heterolasers by Optimizing the Width of the Bragg Grating. *Semiconductors*, **2021**, 55, 672	0.7	0
24	Widening of the Frequency Tuning Bandwidth in a Subterahertz Gyrotron with an External Bragg Reflector. *Radiophysics and Quantum Electronics*, **2020**, 63, 363-370	0.7	0
23	High-Power Free-Electron Masers Based on Linear Induction Accelerators. *Radiophysics and Quantum Electronics*, **2021**, 63, 931	0.7	0
22	Conditions of rogue-wave generation in gyrotrons. *Physics of Plasmas*, **2021**, 28, 083302	2.1	0
21	Quasi-Optical Theory of Relativistic Cherenkov Oscillators and Amplifiers with Oversized Electrodynamic Structures. *Electronics (Switzerland)*, **2022**, 11, 1197	2.6	0
20	Short-wave radiation generation by strip electron beams in the surface-wave excitation mode. *Journal of Communications Technology and Electronics*, **2016**, 61, 501-509	0.5	
19	Bragg Deflectors of Wave Fluxes for High-Power Relativistic Masers. *Technical Physics*, **2019**, 64, 711-719	0.5	
18	Mechanisms of amplification of short electromagnetic pulses in gyroresonance traveling-wave tubes. *Journal of Communications Technology and Electronics*, **2014**, 59, 798-804	0.5	
17	A spatially developed coaxial 30-GHz backward wave oscillator with radiation synchronization by a two-dimensional Bragg structure. *Technical Physics Letters*, **2013**, 39, 509-513	0.7	
16	Generation of high-power broadband terahertz radiation during stimulated backscattering of the pump wave by an intense relativistic electron beam. *Physics of Plasmas*, **2017**, 24, 123112	2.1	
15	Amplification of short-wave radiation based on the resistive instability of a relativistic electron beam (Quasi-optical theory). *Technical Physics*, **2017**, 62, 1242-1249	0.5	
14	Nonlinear dynamics of planar gyrotrons with transverse diffraction coupling of radiation. *Technical Physics*, **2012**, 57, 1135-1142	0.5	
13	Nonlinear dynamics of free electron terahertz lasers with bragg mirrors based on coupling of traveling and quasi-critical waves. *Technical Physics*, **2011**, 56, 155-163	0.5	
12	Free-electron masers based on planar Bragg waveguides. *Technical Physics Letters*, **2009**, 35, 540-544	0.7	
11	Effect of dispersion on the operation of free-electron lasers driven by short electron bunches. *Technical Physics*, **2007**, 52, 141-147	0.5	
10	Nonstationary 2D models of the electron-wave interaction. *Technical Physics*, **2008**, 53, 633-640	0.5	
9	Longitudinal self-focusing of an electron bunch under coherent emission conditions. *Technical Physics Letters*, **2000**, 26, 650-653	0.7	
8	Nonlinear theory of channeling of radiation by a ribbon-shaped stream of cyclotron oscillators. *Technical Physics*, **1999**, 44, 6-11	0.5	

List of Publications

7	Possible emission of supermodes in a free electron laser with a transversely developed interaction space. *Technical Physics Letters*, **1999**, 25, 179-181	0.7
6	Theory of the undulator superradiance of an electron beam pulse in the group synchronism regime. *Technical Physics Letters*, **1999**, 25, 296-299	0.7
5	Phase-Locking of Second-Harmonic Gyrotrons for Providing MW-Level Output Power. *IEEE Transactions on Electron Devices*, **2022**, 69, 754-758	2.9
4	Generation of Terahertz Superradiance Pulses under Stimulated Scattering of Laser Radiation by an Associated High-Current Relativistic Electron Beam. *Technical Physics Letters*, **2020**, 46, 1162-1166	0.7
3	Generation of giant pulses of scattered radiation on the moving front of a pump wave **2010**, 87, 124	
2	Using two-dimensional distributed feedback for the synchronization of emission from laser active media **2010**, 34, 113	
1	Entrainment, stopping, and transmission of microwave solitons of self-induced transparency in counter-propagating magnetized electron beam. *Chaos*, **2022**, 32, 053123	3.3